

Work Order ID 158551

158551

Page 1

Monday, March 27, 2017 9:45:54 AM

Item ID: D3261-1 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Battery Case Tray
 Start Date: 3/27/2017 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 4/4/2017 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan:  Date: MAR 27 2017 Tooling: Date: Run Start ***NR1***
 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D3261	Rev A2

100 FLOW WATER JET 0.00
100
 Waterjet Memo 0.18
 FLOW CNC Waterjet 1-Cut as per Dwg D3261 Dwg Rev: A2 Prog Rev: A2 2-Deburr if necessary

110 HAAS CNC VERTICAL MACHINING #1 2.34
110
 HAAS 1 Memo 0.62
 HAAS CNC vertical machine #1 1- Mill as per Folio FA421 Rev: _____ & Dwg D3261 Rev: _____ 2-Deburr per dwg D3261

120 QC2- Inspect parts off machine FAI/FAIB 0.00
120
 QC Memo 0.01
 Quality Control

NCR
 PTO →

DQA:

Date: 2017-05-25



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: APR 12 2017

Work Order update only

Work Order: <u>158551</u>		DISPOSITION		AGAINST DEPARTMENT/PROCESS					
Part No. <u>D3261-1</u>		Rework ☐		Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐		
NCR No. <u>17-6380</u>		Scrap ☒		Machining ☒	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐		
		Use-as-is ☐		Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐		
		Suspected Unapproved ☐		Large Fab ☐	Composite ☐	Supplier ☐			
Date: <u>17-04-05</u>		Step #: <u>110</u>		QTY Effective: <u>1</u>			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition			PD 17-04-07		
The Part lifted and caused the cutter to make marks on the floor of the part and also resulted in the floor being under tolerance at .100" RC not clamp properly				Scrap qty 1 replace			Completed By		
							DAS		
							20 17-04-05		
							Lead hand / Supervisor Approval Verification		
							PD 17-04-07		
							QC / QA Coordinator Approval		
							PD 17-04-07		
Root Cause				FAULT CATEGORY					
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	☒ Over/Under tolerance				
Equip/Tooling ☒	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	☒ Finish				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	☒ Manufacturing Process								
Misidentified ☐	Past Due ☐	OTHER :							

Work Order ID 158551

Monday, March 27, 2017 9:45:54 AM

158551

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Item ID: D3261-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Battery Case Tray

Start Date: 3/27/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 4/4/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC8- Inspect parts - second check	0.00							DAS 33 9-89
130						/	/		17/04/07
QC	Memo	0.02							
Quality Control									

140	Identify as per dwg & Stock Location: <u>ST182</u>	0.00							DAS 41 9-89
140									
Packaging	Memo	0.01							
Packaging									

DAS
6
9-89

APR 09 2017

150	QC21- Final Inspection - Work Order Release	0.00							
150									
QC	Memo	0.10							
Quality Control									

17/4/11

DAS
21
9-89

APR 10 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Picklist Print

Monday, March 27, 2017 9:45:54 AM

Page 1

Work Order ID: 158551

158551

Parent Item: D3261-1

D3261-1

Parent Item Name: Battery Case Tray

Start Date: 3/27/2017

Required Date: 4/4/2017

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP B04.12.02Material no longer cut in-houseKJ/JLM
IPP Rev:C 08-11-21 Material cut On Waterjet JLM Verified BY:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MUHMWB750		Purchased	No			100	sf	27.6000	1.9	2			

MIJHMWB750

UHMW .750 sheet

03/17/03/27

Location

Loc Qty

Loc Code

MAT019

27.6

119291

27.6

2 + 2

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

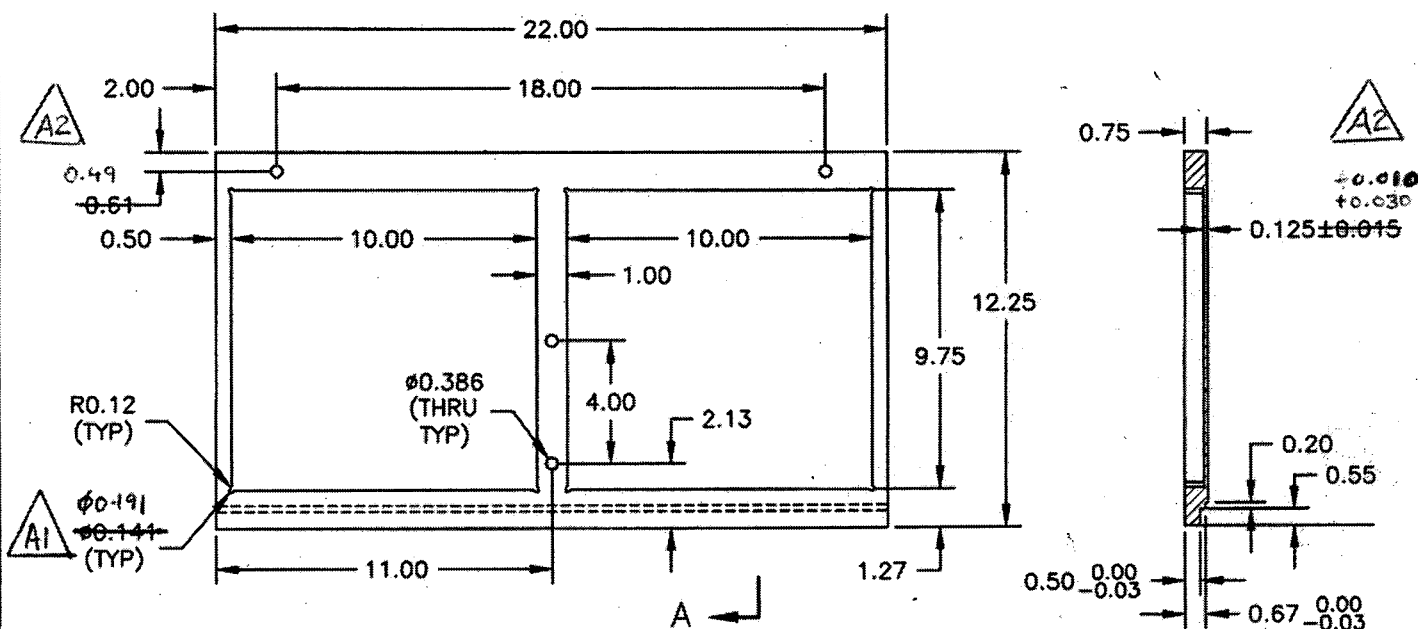
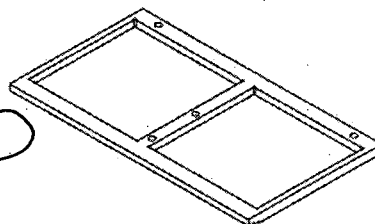
Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coor. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QS1042) Approval	
Description Work Order Deviation		Disposition			Completed By
					Lead hand / Supervisor Approval Verification
					QC / QA Coordinator Approval
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					



DESIGN #	DRAWN BY #	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED UP	APPROVED #	DRAWING NO. D3261	REV. A SHEET 1 OF 1
DATE 04.04.06		TITLE BATTERY CASE TRAY	SCALE 1:6
A	04.04.06	NEW ISSUE	
A1	UP 04.05.14	Ø0.191 WAS Ø0.141	
A2	# 04.06.08	0.125 ^{+0.010} / _{+0.030} WAS 0.125 ^{+0.015} / _{-0.015} ; 0.49 WAS 0.61	

RELEASED
04.04.27 #

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED
SUBJECT TO AMEND.
WITHOUT NOTICE
WORK ORDER
NO. 132551 #



UNDER REVIEW

D3261-1

SECTION A-A

THICKNESS CHANGE
OK # 04.10.29

NOTES:

- 1) MATERIAL: UHMW BLACK PER SPEC CONTROL DRAWING D2689
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES

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DART AEROSPACE LTD		Work Order:	152551
Description: Battery Case Tray (Dual Battery Rack)		Part Number:	D3261-1
Inspection Dwg: D3261 Rev: A2		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
22.00	+/-0.030	22.000	✓		SLIO	View
18.00	+/-0.005	18.000	✓		↓	
12.25	+/-0.030	12.250	✓			
9.75	+/-0.030	9.750	✓			
1.27	+/-0.030	1.270	✓			
11.00	+/-0.030	11.000	✓			
Ø0.191	+0.005/-0.001	.191	✓			
0.50	+/-0.010	.500	✓			
0.49	+/-0.03	.490	✓			
2.00	+/-0.010	2.000	✓			
10.00	+/-0.010	10.000	✓			
1.00	+/-0.010	1.000	✓			
2.13	+/-0.010	2.125	✓			
Ø0.386	+0.005/-0.001	.386	✓			
4.00	+/-0.005	4.000	✓			
0.75	+/-0.030	.750	✓			
0.125	-0.010/+0.030	.150	✓			
0.55	+/-0.030	.550	✓			
0.50	+0.000/-0.030	.490 .500	✓			
0.67	+0.000/-0.030	.660	✓			

DAS 29 9-89		DAS 33 9-89		Prototype Approval: N/A	
Measured by: Date: 17-04-05		Audited by: Date: 17/04/07		Date: N/A	

Rev	Date	Change	Revised by	Approved
A	04.07.07	New Issue	KJ/JLM	
B	04.12.06	Dimension 0.49 +/-0.010 was 0.610 +/-0.03	KJ/JLM	
C	08.11.27	0.67 dimension added	KJ/EC	